

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

AF 1731

In re Patent Application of

VUORINEN et al

Serial No. 08/925,321

Filed: September 8, 1997

Title: METHOD OF TREATING CELLULOSIC PULP

Honorable Commissioner for Patents and Trademarks  
Washington, DC 20231



Atty. Dkt.: 30-336

C# M#

Group Art Unit: 1731

Examiner: Alvo

Date: November 30, 2000

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Sir:

☐ **NOTICE OF APPEAL**

Applicant hereby appeals to the Board of Appeals from the decision dated \_\_\_\_\_ of the Examiner twice/finally  
rejecting claims \_\_\_\_\_ (\$ 310.00 )

\$ 0.00

☐ An appeal **BRIEF** is attached in triplicate in the pending appeal of the  
above-identified application (\$ 310.00)

\$ 0.00

☐ An **ORAL HEARING** is requested under Rule 194 (\$270.00)  
(due within two months after Examiner's Answer)

\$ 0.00

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( 0.00)

☒ A reply brief is attached in triplicate under Rule 193(b)

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this  
paper and attachment(s) (\$110.00/1 month; \$390.00/2 months; \$890.00/3 months; \$1390.00/4 months)

**SUBTOTAL** \$ 0.00

☐ Applicant is a "small entity"; enter 1/2 of subtotal and subtract  
☐ "small entity" statement attached

-\$ ( 0.00)

**SUBTOTAL** \$ 0.00

Less month extension previously paid on

-\$ ( 0.00)

**TOTAL FEE ENCLOSED** \$ 0.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.  
The Commissioner is hereby authorized to charge any deficiency in the fee(s) filed, or asserted to be filed, or which  
should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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Signature: 

#29/BM  
12-6-00

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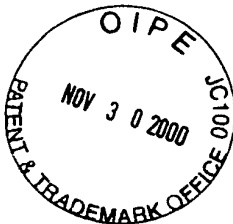
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**REPLY BRIEF**

Sir:

This Reply Brief is filed in response to arguments made in the Examiner's

Answer of October 3, 2000.

In the response to arguments section (13) on pages 5 through 8 of the Examiner's Answer an entire piecemeal approach is taken to the question of obviousness. This is a classic situation where the Examiner has found unrelated individual teachings of certain recitations in the claims of the prior art, and on the basis of the hindsight knowledge of the invention and its advantages, has combined the references. This is specifically and unequivocally contrary to the appropriate approach to take when evaluating the issue of obviousness. See *In re Rouffet*, 149 F.3d 1350, 47 USPQ 2d 1453, 55-9 (Fed. Cir. 1998):

"To reject claims in an application under section 103, an examiner must show an un rebutted *prima facie* case of obviousness. See *In re Deuel*, 51 F.3d 1552, 1557, 34

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USPQ2d 1210, 1214 (Fed. Cir. 1995). In the absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness. See id. ...

When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references. See In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). Although the suggestion to combine references may flow from the nature of the problem, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), the suggestion more often comes from the teachings of the pertinent references, see In re Sernaker, 702 F.2d 989, 994, 217 USPQ 1, 5 (Fed. Cir. 1983), or from the ordinary knowledge of those skilled in the art that certain references are of special importance in a particular field, see Pro-Mold, 75 F.3d at 1573 (citing Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 297 n.24, 227 USPQ 657, 667 n.24 (Fed. Cir. 1985)). Therefore, “[w]hen determining the patentability of a claimed invention which combines two known elements, ‘the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.’” See In re Beattie, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992) (quoting Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)). ...

As this court has stated, “virtually all [inventions] are combinations of old elements.” Environmental Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also Richdel, Inc. v. Sunspool Corp., 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) (“Most, if not all, inventions are combinations and mostly of old elements.”). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever

issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

As noted above, the suggestion to combine requirement is a safeguard against the use of hindsight combinations to negate patentability. While the skill level is a component of the inquiry for a suggestion to combine, a lofty level of skill alone does not suffice to supply a motivation to combine. Otherwise a high level of ordinary skill in an art field would almost always preclude patentable inventions. As this court has often noted, invention itself is the process of combining prior art in a nonobvious manner. See, e.g., Richdel, 714 F.2d at 1579; Environmental Designs, 713 F.2d at 698. Therefore, even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. Cf. Gechter v. Davidson, 116 F.3d 1454, 43 USPQ2d 1030 (Fed. Cir. 1997) (explaining that the Board's opinion must describe the basis for its decision). In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."

The quote from *In re Rouffet*, above, is perhaps more simply put by former Chief Judge Markey in "*Why Not the Statute*", 65 JPOS 331 (1983) where Judge Markey stated "Only God works from nothing. Men must work with old elements."

The Marechal reference cited by the Examiner is a scientific paper and must be understood as a scientific paper, and not something dealing with the real world. Marechal's work relates to the relationship between consistency and pH -- that is the concentration of H<sup>+</sup>ions in the water phase and inside the fiber. One cannot, as the Examiner has done here, pick arbitrary statements in Marechal that support a rejection and combine them with other references dealing with entirely different subjects, and ignoring negative teachings for such combinations of teachings in Marechal. In this regard see *In re Kamm*, 172 USPQ 298, 301, 302 (CCPA 1972) wherein the Court held:

"The rejection here runs afoul of a basis mandate inherent in 103 -- that 'a piece-meal reconstruction of the prior art patents in the light of appellants' disclosure' shall not be the basis for a holding of obviousness. *In re Rothermel*, 47 CCPA 866, 870, 276 F.2d 393, 396, 125 USPQ 328, 331 (1960). 'It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.' ... However, we are satisfied that when the secondary references are viewed in their entirety, with due consideration given to what they fail to disclose and what they disclose as undesirable, it is evident that the proposed modification of the primary reference would not have been obvious to one of ordinary skill in the art at the time the invention was made." (Emphasis added.)

On pages 264-6 of Marechal it is stated that the kappa number and the amount of metals can be decreased by acid treatment. However, nowhere in these paragraphs

or elsewhere does Marechal describe the conditions that are set forth in the claims herein that are necessary in order to avoid yield and strength losses.

It should also be pointed out that in the final conclusions on page 279 Marechal says that it is possible to optimize an acid process in view of chlorine-free bleaching processes. However, Marechal has not done it, nor have the other references (such as EP 511695), nor have they provided any detailed teaching to one of ordinary skill in the art as to how it might be done. Under these circumstances such a statement in Marechal is worthless. See *In re Luvisi*, 144 USPQ 646, 650 (CCPA 1965) wherein the court held:

"But an expression which includes numerous species does not, necessarily, ipso facto 'disclose' each and every one of those species. As so aptly stated by appellants, 'It is possible for a patent to *include* a wide variety of subject matter but at the same time *not to disclose a particular* subject matter.' (Emphasis ours.) We might add that the reference need not be a patent. Our approach to this question is to ask whether or not it can fairly and reasonably be said that one of ordinary skill in the art through a reading of the entire reference has constructive possession of the thing itself, as opposed to possession of mere language which embraces the name of that thing."

With respect to consistency, Marechal states that there are chemical reasons why the consistency has to be below 5% (page 269, second paragraph, and page 279, second full paragraph, last sentence). As the reaction times are long this means -- in practical industrial processes -- large storage chests, and like equipment. Also, this means -- in a practical situation -- a high consumption of steam when a dilute suspension (such as below 5% of Marechal) is heated to a high temperature. Thus, Marechal's statement on the consistency of below 5% means to a person of ordinary

skill in the pulp and paper art that Marechal's entire teachings relate to a laboratory procedure, and do not indicate anything regarding the real world of practicality.

According to the claimed invention the acid treatment can be done in a consistency range of 0.1-50%. What this means is that the reaction is essentially independent of consistency in the amount of water present. A suitable industrial process would typically be designed with consistencies around 10%, or around 30%, but Marechal's teachings of below 5% are negative teachings of the invention.

The EP 511,695 patent publication is also not appropriate for providing a *prima facie* case of obviousness for the claimed invention. If it really were obvious to use high temperatures, long reaction times, and low pH to reduce the kappa number without any chlorine-containing chemicals as asserted by the Examiner, then the inventors of the EP 511,695 patent publication would have disclosed such conditions. The inventors of the EP 511,695 patent publication are skilled in the art of bleaching with non-chlorine chemicals and are attempting to develop the method of bleaching and reducing kappa without chlorine-containing chemicals. Since there is no disclosure of the conditions according to the invention, it is clear that those skilled artisans that developed the EP 511,695 patent publication would not use the conditions claimed herein to reduce the kappa number.

It is well known that high temperature conditions dissolve hemicellulose and reduce pulp yield and strength (as indicated by, among others, Marechal). Therefore, it would not be obvious to use the temperatures of Marechal in the acid stage of EP 511,695 because the purpose of the acid stage according to the EP publication is only to remove harmful metals, which can be done at a lower temperature (e.g. about 50°C),

and therefore there would be no reason to unnecessarily dissolve hemicellulose and reduce pulp yield and strength in the EP reference which would be the result of the Examiner's suggestion. That is in the process of the EP 511,695 patent publication there is no need to use high temperatures to lower kappa number. If a delignifying effect is desired, the acid treatment is suggested to be performed in the presence of a delignifying chemical (see page 3, lines 48-51). That is, the EP 511,695 patent publication does not recognize the possibility of delignifying pulp with merely an acid stage, but requires that a delignifying chemical also be used if a delignification effect is desired. Therefore there is no need to find any other methods to lower kappa, and the teachings of the EP 511,695 reference are specifically contrary to the invention. Where the teachings of a reference are contrary to an invention there can be no *prima facie* case of obviousness of the modification of that reference to teach the invention. See *In re Dow Chemical Company*, 837 F.2d 469, 473, 5 USPQ2d, 1529, 1532 (Fed. Cir. 1988).

The process in the Lachenal et al reference is a process relating to the pretreatment and activation of lignin prior to a peroxide treatment. That is also how Marechal explains and understands their results -- see the paragraph bridging pages 264-266 of Marechal. Thus, Lachenal et al have no common reference to the claimed invention.

Also, all three of the EP reference, Marechal, and Lachenal et al relate to chlorine-free bleaching. However, according to the present invention bleaching with chlorine or chlorine dioxide is just as suitable. See claims 5 and 29 for example. According to the invention an efficient method to carry out bleaching with chlorine-



containing chemicals so that the consumption of the chemicals can be considerably decreased is provided. However, none of the applied references deals with this proximate problem. Further, the EP reference suggests that the acid stage be carried out in the presence of chlorine dioxide (page 3, line 45) which is specifically against the teachings of the present invention in which the pulp is first treated in an acid stage and then bleached with a bleaching chemical (e.g. chlorine dioxide or chlorine). This negative teachings negates any *prima facie* case of obviousness. See *In re Dow Chemical, supra*.

With respect to the first full paragraph on page 8 of the Examiner's Answer, the appellants have specifically argued all of the dependent claims. Appellants have not only argued that the limitations of those claims are not present in the prior art, but that there is no reason to provide such limitations, including because each of the individual limitations of the dependent claims sets forth an, for some circumstances, advantageous and preferred embodiment of the invention which gets highly desirable results. The Examiner grossly misinterprets 37 CFR §1.192(c)(6)(iv), and uses that as an excuse to not even make any attempt to establish a *prima facie* case of obviousness for anything except for the independent claims.

That is, the appellants have argued that not only is what is set forth in all of the claims not shown in the prior art, but that there is no reason why one of ordinary skill in the art would employ what is set forth therein, and therefore no *prima facie* case of obviousness. The Federal Circuit and CCPA before it have clearly and unequivocally required the Patent & Trademark Office in the first instance to establish a *prima facie* case of obviousness. See *In re Warner*, 154 USPQ 173, 177-78 (CCPA 1967).

In determining the propriety of a rejection under 35 USC §103, it is well settled that the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596, 1598, 1599 (Fed. Cir. 1988); *Ashland Oil, Inc. v Delta Resins and Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985); *ACS Hospital Systems, Inc. v Montefiore Hospital*, 732 F.2d 1572, 221 USPQ 929 (Fed.Cir. 1984). The law of the Federal Circuit is that "[a] *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976), emphasis added. See also *In re Lulu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of *prima facie* obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification." (emphasis added)).

The consideration of appellants' arguments should also be specifically evaluated in the context of the Final Rejection. While criticizing appellants for not specifically arguing each individual claim, the Final Rejection does not even mention the claims at issue here. The Final Rejection contains no detailed rejections of claims 13, 15, 21, 3, 18, 20, and 22 through 28; in fact only claims 3, 20, and 21 are even mentioned. The other claims are completely and unequivocally ignored. Apparently what the Examiner wants is for appellants to argue against themselves, or to assume what the reasoning is for the rejections of the individual claims in the shotgun rejection provided in the Final

Action, and then argue against that assumption. There is no basis in the Rules of Practice, the statute, or the MPEP for that approach, and it is completely inappropriate to expect appellants to do any more than they have (which completely fulfills the requirements of 37 CFR 1.192) under these circumstances.

In conclusion, the Final Rejection is clearly inappropriate, and early reversal thereof and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

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